

Stream \_\_\_\_\_ Site \_\_\_\_\_  
 Date \_\_\_\_\_ Investigator \_\_\_\_\_

Habitat Parameter	Category			
	Optimal	Sub-Optimal	Marginal	Poor
<b>1A. Riffle Development</b>  SCORE (____)	Well-developed riffle; riffle as wide as stream and extends two times width of stream.  9-10	Riffle as wide as stream but length less than two times width.  6-8	Reduced riffle area that is not as wide as stream and its length less than two times width.  3-5	Riffles virtually non-existent  0-2
<b>1B. Benthic Substrate</b>  SCORE (____)	Diverse Substrate dominated by cobble.  9-10	Substrate diverse, with abundant cobble but bedrock boulder, fine gravel, or sand prevalent.  6-8	Substrate dominated by bedrock, boulders, fine gravel, sand or silt; cobble present.  3-5	Monotonous fine gravel, sand, silt or bedrock substrate.  0-2
<b>2. Embeddedness</b>  SCORE (____)	Gravel, cobble, or boulder particles are between 0-25% surrounded by fine sediment (particles less than 6.35mm [.25"])  16-20	Gravel, cobble, or boulder particles are between 25-50% surrounded by fine sediment.  11-15	Gravel, cobble, or boulder particles are between 50-75% surrounded by fine sediment.  6-10	Gravel, cobble, or boulder particles are over 75% surrounded by fine sediment.  0-5
<b>3. Channel Alteration (channelization, straightening, dredging, other alterations)</b>  SCORE (____)	Channel alterations absent or minimal; stream pattern apparently in natural state.  16-20	Some channelization present, usually in areas of crossings, etc, evidence of past alterations (before past 20 yr) may be present, but more recent channel alteration is not present.  11-15	New embankments present on both banks; and 40 to 80% of the stream reach channelized and disrupted.  6-10	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted.  0-5

<p>4. Sediment Deposition</p> <p>SCORE ( )</p>	<p>Little or no enlargement of bars and less than 5% of the bottom affected by sediment deposition.</p> <p>16-20</p>	<p>Some new increase in bar formation, mostly from coarse gravel; 5-30% of the bottom affected; slight deposition in pools.</p> <p>11-15</p>	<p>Moderate deposition of new gravel, coarse sand on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition in pools prevalent.</p> <p>6-10</p>	<p>Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.</p> <p>0-5</p>
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Habitat Parameter	Category			
	Optimal	Sub-Optimal	Marginal	Poor
5. Channel Flow Status	Water fills baseflow channel; minimal amount of channel substrate exposed.	Water fills > 75% of the baseflow channel; < 25% channel substrate exposed.	Water fills 25-75% of the baseflow channel; riffle substrates mostly exposed.	Very little water in channel, and mostly present as standing pools.
SCORE ( )	16-20	11-15	6-10	0-5
6. Bank Stability (Score each bank)  Note: determine left or right side while facing downstream.	Banks stable; no evidence of erosion or bank failure; little apparent potential for future problems.	Moderately stable; infrequent, small areas of erosion mostly healed over.	Moderately unstable; moderate frequency and size of erosional areas; up to 60% of banks in reach have erosion; high erosion potential during high flow.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of banks have erosion scars on side-slopes.
SCORE ( ) (left) SCORE ( ) (right)	9-10	6-8	3-5	0-2
7. Bank Vegetation Protection (note: reduce scores for annual crops and weeds which do not hold soil well, eg knapweed)	Over 90% of the streambank surfaces covered by stabilizing vegetation; vegetative disruption minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by vegetation; disruption evident, but not affecting full plant growth potential to any great extent; more than one-half of potential plant height evident.	50-70% of the streambank surfaces covered in vegetation; dsirruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of potential plant height remaining.	Less than 50% of the streambank surfaces covered by vegetation; extensive disruption of vegetation; vegetation removed to 2 inches or less.
SCORE ( ) (left) SCORE ( ) (right)	9-10	6-8	3-5	0-2
8. Vegetated Zone Width (score zone for each side of stream)	Width of vegetated zone > 100 feet.	Width of vegetated zone 30-100 feet.	Width of vegetated zone 10-30 feet.	Width of vegetated zone < 10 feet.
SCORE ( ) (left) SCORE ( ) (right)	9-10	6-8	3-5	0-2

TOTAL SCORE ( )

MOD 5/16/95

## MACROINVERTEBRATE HABITAT ASSESSMENT FIELD FORM

## GLIDE / POOL PREVALENT STREAMS

Stream \_\_\_\_\_ Date \_\_\_\_\_  
 Site \_\_\_\_\_ Investigator \_\_\_\_\_

Habitat Parameter	Category			
	Optimal	Sub-Optimal	Marginal	Poor
1. Bottom Substrate / Available Cover          SCORE ( )	Greater than 50% mix of snags, submerged logs, undercut banks, rubble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).          16-20	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).          11-15	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.          6-10	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.          0-5
2. Pool Substrate Characterization          SCORE ( )	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.          16-20	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.          11-15	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.          6-10	Hard-pan clay or bedrock; no root mat or vegetation.          0-5
3. Pool Variability          SCORE ( )	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.          16-20	Majority of pools large-deep; very few shallow.          11-15	Shallow pools much more prevalent than deep pools.          6-10	Majority of pools small-shallow or pools absent.          0-5
4. Channel Alteration (channelization, dredging, straightening, other alterations)          SCORE ( )	Channel alteration absent or minimal; stream with normal, sinuous pattern.          16-20	Some channel alteration present, usually in areas of crossings, evidence of past channel alterations, (prior to past 20 yrs) may be present, but more recent channel alteration is not present.          11-15	New embankments present on both banks; channelization may be extensive, usually in urban areas or drainage areas of agriculture lands; and >80% of stream reach channelized and disrupted.          6-10	Extensive channelization; banks shored with gabion or cement; heavily urbanized areas; instream habitat greatly altered or removed entirely.          0-5
5. Sediment Deposition          SCORE ( )	Less than 20% of bottom affected; minor accumulation of fine and coarse material at snags and submerged vegetation; little or no enlargement of islands or point bars.          16-20	20-50% affected; moderate accumulation; substantial sediment movement only during major storm event; some new increase in bar formation.          11-15	50-80% affected; major deposition; pools shallow, heavily silted; embankments may be present on both banks; frequent and substantial sediment movement during storm events.          6-10	Channelized; mud, silt, and/or sand in braided or nonbraided channels; pools almost absent due to deposition.          0-5

Habitat Parameter	Category			
	Optimal	Sub-Optimal	Marginal	Poor
<b>6. Channel Sinuosity</b>  SCORE ( )	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line.  16-20	The bends in the stream increase the stream length 2 to 3 times longer than if it was in a straight line.  11-15	The bends in the stream increase the stream length 2 to 1 times longer than if it was in a straight line.  6-10	Channel straight; waterway has been channelized for a long distance.  0-5
<b>7. Channel Flow Status</b>  SCORE ( )	Water reaches base of both lower banks and minimal amount of channel substrate is exposed.  16-20	Water fills > 75% of the available channel; or < 25% of channel substrate is exposed.  11-15	Water fills 25-75% of the available channel and/or riffle substrates are mostly exposed.  6-10	Very little water in channel and mostly present as standing pools.  0-5
<b>8. Bank Vegetation Protection (score each bank)</b>  Note: determine left or right side by facing downstream.  SCORE ( ) (LB) SCORE ( ) (RB)	More than 90% of the streambank surfaces covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; Vegetation disruption minimal or not evident; almost all plants allowed to grow naturally.  9-10 9-10	70-90% of the streambank surfaces covered by native vegetation; but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.  6-8 6-8	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.  3-5 3-5	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 2 inches or less in average stubble height.  0-2 0-2
<b>9. Bank Stability (score each bank)</b>  SCORE ( ) (LB) SCORE ( ) (RB)	Banks stable; no evidence of erosion or bank failure; little potential for future problems.  9-10 9-10	Moderately stable; infrequent, small areas of erosion mostly healed over.  6-8 6-8	Moderately unstable; up to 60% of banks in reach have areas of erosion; high erosion potential during floods.  3-5 3-5	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.  0-2 0-2
<b>10. Riparian Vegetation Zone Width (score each bank riparian zone)</b>  SCORE ( ) (LB) SCORE ( ) (RB)	Width of riparian zone > 18 meters; human activities (i.e., parking lots, roadbeds, clearcuts, lawns, or crops) have not impacted zone.  9-10 9-10	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.  3-5 3-5	Width of riparian zone 6-12 meters; human activities have impacted a great deal.  3-5 3-5	Width of riparian zone < 8 meters; little or no riparian vegetation due to human activities.  0-2 0-2

TOTAL SCORE ( )

MOD 10/18/94